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ABSTRACT

This study sought to determine the needs of early childhood teachers in Kentucky for education to help them manage children's nutrition in early childhood programs. The study also sought to determine whether formal classes, self-study via computer, or site-based inservice workshops is the most desirable format for teacher nutrition education. A survey of 382 teachers at licensed centers and Head Start and Early Start programs found that more than three-fourths of respondents believed that teachers should: (1) know how to recognize signs of malnutrition; (2) know how to plan creative meals and snacks; and (3) complete classes in nutrition education. Although the majority felt that they could identify the signs of malnourishment in children under their care and develop healthy meals for children, large minorities felt they could not. Of the 311 teachers who responded positively to a personal need for nutrition education, 78 percent favored inservice workshops, 70 percent favored formal classes, and 40 percent favored self-study via computer. Other teacher attitudes towards child nutrition and nutrition education are discussed. Overall, the results indicate a need for nutrition education programs for early childhood teachers. (MDM)

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Nutrition education needs of early childhood teachers

Hazel Forsythe and Myrna Wesley

Introduction

The Department of Health and Human Services reports that children in families whose income falls below 185% of the federal poverty level are subject to nutritionally preventable problems but are less likely to receive referrals to preventive services. The Kentucky Education Reform Act (KERA) relies on elementary schools, early childhood programs and Family Resource Youth Services Centers to monitor and identify children "At-risk." However, teachers and child care providers feel they have insufficient nutrition information to manage nutrition monitoring of preschoolers but also have limited time for nutrition education. (3,4)

The United States Department of Agriculture (USDA) guidelines require that preschool and elementary programs receiving state funding meet 1/3 to 1/2 of the Recommended Dietary Allowances per child. Research has shown that the USDA menu pattern guidelines do not consistently meet nutrient requirements if teachers and care providers have limited knowledge of nutrient sources. If no specific guidelines are given for menu planning, meals planned under these conditions have limited nutrient availability. (5) Also, Forsythe found that unless teachers encouraged children to have additional helpings, the servings offered did not meet nutrient requirements for calories, iron, zinc, and vitamin C. Thus, it is important for teachers and care providers to have the nutrition knowledge necessary for monitoring and identifying children at risk nutritionally.

Purpose

Adult learners have to perceive a need before learning occurs effectively. If early childhood teachers see no need for nutrition education they will not pursue such learning. The purpose of this research was to describe teachers knowledge needs for managing nutrition in early childhood programs. A major aim was to determine whether formal classes, self study via computer, or site based in-service workshops on nutrition education was the most desirable format for nutrition education for Early Childhood teachers.

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Methodology

Nine hundred and eighty (980) questionnaires were mailed to preschools and day care centers licensed by the state of Kentucky. A random second mailing and telephone interviews were conducted to increase the response rate and ascertain differences between respondents and non-respondents. The response rate was 39% (382 persons).

The pilot tested questionnaire consisted of six labelled sections rated by a 3 point likert type scale and closed questions about preference of teacher directed or computer directed format for nutrition education. The six sections addressed: nutrition information; dietary management; nutrition monitoring of malnourishment; healthy eating habits; meal organization; and confidence in nutrition ability for working with children. The questionnaire included socio-economic factors such as the geographical location of the school/care center, size and type of the institution, etc. It also included question about preferences of care providers in terms of nutritional information, and the school's implementation of such programs. The questions asked about (1) nutrition information, the USDA guidelines, and the specifics of "healthy" nutrition; (2)dietary management: the importance and availability to their institutions of "healthy" foods; (3) meal organization: how they and their institutions dealt with planning balanced meals.

This project selected a set of variables, confidence in nutrition ability, as likely to influence the self perceived confidence of care providers. Multiple regression was used to evaluate how the model fits. Successive regressions were done with the intention of identifying the "best" model. The process was a gradual elimination of non "robust" variables, using individual (T-test) and overall (F-test) of the parameters. The model's predictive power and the adjusted R^2 were used to determine the predictive validity of the questions.

Findings

Population: Early Childhood teachers at licensed type I and type II centers, and head/early start programs participated. The programs were in urban and rural settings throughout the Commonwealth of

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Kentucky. Of the 120 countries, 84 were represented in the responses. Teachers of approximately 11,230 children aged 2-6 years old described their nutrition education needs on the questionnaire.

Nutrition Knowledge: Approximately 84-99% of the care providers responding, believed they should know how to recognize signs of malnutrition, know how to plan creative meals and snacks and complete classes in nutrition education for children. A smaller percentage (71%) believed care providers should know how to categorize foods by the nutrients they contain with 53% of these ranking this as more than moderately important, and 76% believing that care providers should understand dietary management for children.

Nutrition Knowledge	Yes	No	Important
Know how to recognize malnutrition	84%	16%	43%
Use USDA guidelines to plan meals and snacks	82%	18%	56%
Recognise foods by nutrient categories	71%	29%	53%
Understand dietary management of special needs and typical children	76%	24%	20%

Nutrition Monitoring: Approximately 63% of the respondents believed they could identify the signs of malnourishment, defined as undernutrition and overnutrition, by looking at clinical signs. Forty three percent (43%) thought this knowledge was moderately important for the care provider. The care providers (58%) believed they could identify meal time behaviors that predict overweightness with 45% thinking this was more than moderately important. Sixty five (56%) percent of care providers believed they knew what action to take regarding a malnourished child. This was ranked by 47% of the respondents as of more than moderate importance to know. Only 56% of care providers believed that they knew how to check whether nutrition needs of preschoolers were met at home and at school while only 47% thought this was important for the care provider to know.

Nutrition Monitoring	Yes	No	Important
Signs of malnourishment	63%	37%	43%
Identify behaviors leading to risk	58%	42%	45%
Action on behalf of malnourished child	56%	35%	47%
More than 20% accept second helpings	73%	27%	34%
Monitor if child's nutrition needs met			
Monitor needs of child with disability	34%	66%	52%

Meal Organization: Approximately 99% of care providers responded that they believed the care provider should encourage the children to wash their hands using soap before meals. Eighty nine percent (89%) responded that this was of more than moderate importance. Approximately 97.5% of care providers believed that the care provider should encourage children to practice consideration at the table. Thirty eight percent (38%) of care providers believed there should be a seating plan used with 27% thinking that was more than moderately important. Ninety two (92%)percent of care providers believed the care providers should encourage the children to have social time at the table with 70% ranking this as more than moderately important.

Eating Habits and Meal Organization	Yes	No	Important
Talk about healthy attitudes toward foods	79%	15%	15%
Encourage children to have second helpings	67%	33%	18%
Allow extra time for slow eaters	95%	5%	20%
Encourage children to finish all portions	75%	25%	20%
Separate meal sittings for special needs children	20%	80%	26%
Include chidren with disabilities in meal sittings with typical children	54%	46%	14%
Encourage social time during meals	92%	8%	70%

Confidence in Nutrition Ability: About 86% of care providers responding ranked themselves highly at planning a balanced meal, and 71.2% ranked themselves as better than moderate at selecting sources of nutrients, 58% ranked themselves highly in combining different food groups for nutritious snacks attractive to children, 71% ranked themselves highly on preparing and presenting meals acceptable to preschoolers and 47% ranked themselves highly at building healthy attitudes to food. About 56% felt confident about planning nutrition lessons and 44% though this was important.

Confidence in Nutrition Ability	High	Imp
Planning a balanced meal	86%	71%
Categorizing foods by sources of nutrients	49%	51%
Combining food groups for nutritious and attractive snacks	58%	62%
Preparing/presenting meals acceptable for preschoolers	71%	72%
Handling/storing foods for safety/wholesomeness	87%	46%
Cooking to retain nutrients	74%	79%
Selecting foods textures for feeding delays	14%	86%
Serving meals in portion sizes for children	70%	50%
Planning nutrition lessons	56%	44%
Building healthy attitudes to food	47%	53%

Preference for Education Format: Of the 382 respondents, 311 responded positively to a personal need for nutrition education. Three formats were offered for nutrition education, in-service learning, classes in a university or junior college, or self instructional computer modules. In response to the three education formats 78.2% responded yes to the

Education Format	Preference	Rural	Urban
Classroom situation with other care providers *	37%	54%	46%
Self instructional learning modules on computer **	20%	31%	69%
Series of in-service workshops ***	43%	47%	53%

* n= 59
** n= 32
*** n= 70

in-service format, 69.9% to the classroom format and 39.7% to the self instructional study using a computer. The respondents were divided into urban and rural settings to determine if there were differences in education needs based on setting. Rural respondents were more likely to say no to the computer modules while urban respondents were more likely to say no to classes.

Implications

Teachers and care providers perceived their needs for nutrition knowledge differently from previous research findings and differently from KERA expectations(3). Only half the respondents thought it more than moderately important to be able to categorize foods by the nutrients. Drake found this knowledge was necessary to consistently meet requirements even when following the USDA guidelines (5).

In the area of nutrition monitoring KERA expectations are that care providers, teachers, and family resource center coordinators will be able to monitor and identify children at risk, make appropriate referrals, and provide developmentally appropriate nutrition education(6) . The finding that school personnel are not comfortable with this role has implications for children in daycare and especially for children with disabilities. Such children mainstreamed in early childhood programs may have developmental feeding delays that necessitate special attention.

The perception of early childhood teachers and care providers that they lack the knowledge to monitor nutritional status and lack time to gain the knowledge may contribute to the low importance attached to this area. It is interesting to note the importance attached to encouraging social time at the table versus identifying nutrition problems(70% compared to 43%). Few respondents considered nutrition risk to be a problem - a misperception with 24.5% of children in Kentucky being poor (7)). During the telephone interviews some care providers expressed the belief that children were not malnourished in the U.S. as they were in developing countries, thus there was no need for care providers to look for nutrition problems. Also, teachers felt the responsibility for risk monitoring lay elsewhere.

The respondents preferred instructor supervised, in-service nutrition courses. Low computer literacy and limited access were cited as the reasons for the ranking. Regardless of the medium chosen the implication was clear that teachers and care providers believed they needed nutrition classes.

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